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ANTIVIRAL AGENT
[Kō-uirusu-zai]

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Specification /119*

1. Title of the Invention

Anti-Viral Agent

2. Claim

An anti-viral agent containing raw soybeans or albumen.

3. Detailed Description of Invention

[Industrial Use]

The present invention relates to an anti-viral agent containing raw soybeans or albumen.

[Prior Art]

Viruses are pathogens in humans and livestock and other homoiothermal animals and a vaccine is usually used for these.

[Problems Which the Present Invention is Intended to Solve]

However, no vaccine has been developed for these and those vaccines which have been developed have yet to be put into practical use. For example, the rotavirus proliferates on the epithelium of the intestines in infants and young children as well as cows, pigs, goats and other livestock and oftentimes causes serious non-bacterial diarrhea. The rotavirus has a strong infectivity and nosocomial infections in maternity wards are problematical. Moreover, when the current multi-head intensive breeding method in the livestock industry is used, a great deal of damage is done once it develops and it presents huge problems in the industry.

* Numbers in the margin indicate pagination in the foreign text.

Currently no vaccine for this virus has been put into practical use. Aside from oral or parenteral transfusion as a symptomatic therapy for dehydration symptoms caused by diarrhea, there are no means for treating this and no drastic therapy has been established.

[Means Used to Solve the Problems]

After a great deal of research on an anti-viral agent, the inventors found that raw soybeans and albumen have an anti-viral action.

The present invention was attained based on these findings.

The raw soybeans used in the present invention are soybean seeds, powdered soybean seeds and defatted raw soybeans, raw soya milk and other pressed oil raw soybean products. The albumen used may be raw albumen and frozen albumen and the like and there are no particular restrictions as long as it contains raw albumen. /120

There are no particular restrictions on the administration of the anti-viral agent in the present invention and it may be administered to humans, cows, horses, goats, pigs and other livestock. The dose administered should be at least 0.01 g per day per 1 kg of body weight and specifically when soybean seeds and powdered soybean seeds are used, it should be approximately 0.06 to 6 g; when defatted raw soybeans are used, the dose should be at least 0.02 g and preferably 0.04 to 4 g; when raw soybeans are used, it should be at least 0.01 g in powdered form and preferably approximately 0.02 to 2 g; when administered in the form of albumen,

it should be at least 0.01 g and preferably approximately 0.03 to 3 g.

Moreover, it is usually administered orally.

The period for administering the anti-viral agent is usually the morbidity period of the virus. However, for the sake of prevention, it should be a period where the subject is particularly susceptible to the disease such as when the patient is an infant or young child or when the patient is very young and susceptible to the rotavirus.

The anti-viral agent in the present invention is a formulation made by mixing with a physiologically harmless solid or liquid carrier so that the raw soybean or albumen is used as is or so that the raw soybean or albumen constitutes at least 1 % and preferably at least 10 %. Examples are tablets, capsules, granules, dispersions, syrups and other solid formulations or liquid formulations. It may be administered as is or it may be administered by adding it to water, milk, processed milk and other food or drink. The solid carrier used here may be lactose, cornstarch, glucose, defatted powdered milk, defatted rice bran, calcium lactate, calcium carbonate and cellulose. The liquid carrier may be water, saline, syrup and the like. Besides these, an emulsifier, dispersant, suspension agent, lubricant, stabilizer, sweetener, anti-fungal agent, antioxidant and other assistant or additive may be used.

Furthermore, another drug may be added to the anti-viral agent for homoiothermal animals in the present invention.

Practical Example 1

We placed 3 wt parts of defatted powdered milk and 1 wt part of glucose in 1 wt part of defatted raw soybean powder in a V model mixer, stirred it and mixed it sufficiently and obtained a dispersant in powdered form.

Practical Example 2

We placed 3 wt parts of cornstarch in 2 wt parts of powdered albumen and placed these in a V-model mixer, stirred it, mixed it thoroughly and obtained a dispersant in powdered form.

[Effect]

Next, we shall explain the outstanding effect of the anti-viral agent in the present invention by citing an experimental example of it.

Experimental Examples

(1) Methodology of Experiment

We studied the anti-viral action on the rotavirus using a cultured cell group.

The human rotavirus was used to infect fetal monkey kidney MA 104 cells at moi 0.5. We cultured this for 20 hours while replacing the culture medium every 5 hours with a serum-free MEM culture medium with added albumen.

Next, we studied the amount of the virus discharged in the culture medium using the fluorescence focus assay method.

(2) Results of Experiment

Results are indicated in Table 1

Table 1

物質名	添加量%	ウイルス量
生・豆乳	0.05	3.2×10^{2}
	0.2	2.3×10^{1}
	0.5	1.8×10^{2}
卵白	0.1	4.4×10^{2}
	0.5	3.7×10^{2}
	1.0	2.3×10^{2}
対照	無添加	4.0×10^{4}

Key:

Name of Substance	Amount Added %	Amount of Virus
Raw soya milk		
Albumen		
Control	Not added	

It can be seen from the table that the anti-viral agent in the present invention conspicuously inhibits proliferation of the virus when at least 0.2 % is added.

As a result, we can expect that the formulation in the present invention will be used as an anti-viral agent for homoiothermal animals.